

DMR

APPLICATION COVER SHEET FOR AN EXPERIMENTAL LEASE

Name: Joseph Porada

Address: 68 Downeast Farm Road

City: Hancock

County: Hancock

State, zip: Maine, 04640

Telephone: home/ cell 207 479 0322

Email address: jporada@downeastacadiaseafarms.com

RECEIVED

AUG 22 2012

**Maine Department of
Marine Resources**

**ACCEPTED AS COMPLETE
9/20/12**

Location of lease site: town county waterbody
Surry Hancock Morgan Bay

Additional description North of Jed Island, approximately 2.5 miles
(e.g. south of B Island)

Total acreage requested: 4 acres
(2-acre maximum)

Lease Term requested: 3 years
(3-year maximum)

Name of species to be cultivated, common and scientific names:

Quahogs (Mercenaria mercenaria), American Oyster (Crassostrea virginica), European Oyster (Ostrea edulis)

Name and address of the source of seed stock, juveniles, smolts, etc., to be cultivated:

The Downeast Institute, Beals Island ME; Jesse Leach/Bagaduce River Oyster, Penobscot, ME;
Tonie Simmons/Muscongus Bay Aquaculture, Medomak, ME

Amount of application fee enclosed: \$100
(\$100 payable to: Treasurer, State of Maine)

I hereby state that the information included in this application is true and correct and that I have read and understand the requirements of the Department's rules governing aquaculture.

Signature: Joseph Porada Date: 8/17/2012

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

List of Attachments

- A) Pages 1 & 2 Vicinity Maps
- B) Boundary Description
- C) a & b: Riparian owner list
 - c: Surry tax map showing 1000' radius from site
 - d1 & d2: Surry tax map showing lots in site vicinity
- D) Written permission for landing access
- E) Written permission for landing access
- F) Pages 1 & 2: Sketches of site plan
- G) Pictures of proposed gear
- H) Acknowledgement of Rule: Site Marking and Performance Bond

Summary of Proposed Aquaculture Experiment at Morgan Bay, Surry, by Joseph Porada

NOTE: Please refer to the application itself for a more detailed description of the proposed project.

I, Joseph Porada propose to conduct aquaculture experiments in conjunction with the Downeast Institute of Beals, Maine and, in part, under a small business research grant from the U.S. Dept. of Agriculture SBIR program. A variety of culture methods will be tested on the lease site over a three-year period involving for quahogs, European and American oysters. The growth and survival rates will be compared with those from my other current experimental lease sites in Trenton (Goose Cove).

There is little natural production of these species in eastern Maine, although there are good markets for them. What natural production we have is extremely localized and limited in commercial quantities. The goal of the experiment is to find viable and optimal culture methods and locations for growing these species that can later be developed more fully under a standard commercial aquaculture lease while lessening harvest pressure on wild stocks in the area. If viable culture techniques can be developed, it is possible not only that quahog production could be developed on aquaculture lease sites, but that this might also enhance the natural population and afford added opportunity and employment in our area. The experiment is commercial. Oysters will be tested specifically for commercial viability in Morgan Bay.

The research method involves husbandry of oysters and quahogs using floating, suspended and bottom gear in plots at different densities, sizes, times, and locations. A variety of gear will be used for predator protection, including plastic netting, shrimp wire cages, plastic mesh growing cages, and soft bags, all in a variety of mesh sizes. In our Experiments in Goose Cove, Trenton, we have found plots and treatments without netting to have very low survival and growth rates. All treatments will involve predator barriers as shown in the application. Shellfish will be harvested by hand, using hoes and bull rakes, for measurement, analysis and eventual marketing.

Nursery bags measuring 5' x14' will be placed to determine nursery potential for hard clams. The bags are constructed of fiberglass house screening on the bottom over laid with 1/6" or 1/4" plastic netting and sealed. These mats are effectively sealed bag incubators and have shown excellent potential in trials at Goose Cove, Trenton. Shellfish cages, nursery bags and soft bags will be placed directly on bottom. Floating nursery and grow out cages will be placed on the lease site for both clams and oysters. Ten tray racks for clams and oysters will be placed with a maximum height of 3.5 feet above the bottom. These will be separately marked within the lease site. Other gear will not exceed 12 inches in height above the bottom. (During low tide, much of this gear will be visible from outside the site. Deep keeled and Motorized navigation through the site is not recommended, though there will be ample marking and paths between gear for non power boats such as canoes and kayaks. There is ample room outside the site for larger vessels ingress and egress. At it's most narrow point, the head of Morgan Bay is over 2200 feet wide. The proposed site is approximately 400 feet wide)

Green crabs are evidenced as being the #1 predator and obstacle to farming hard clams. Green crab traps will be used in and around the site under a Commercial DMR Green Crab License. We believe this will lessen green crab predation and their presence the vicinity of our project and all of upper Morgan Bay to the benefit and higher survival rates of wild shellfish recruitment. All netting used in this study and further application is mainly to protect seed and growing animals and deter green crabs and other predators such as starfish and carnivorous snails.

*picture and dimensions attached

APPLICATION FOR AN EXPERIMENTAL AQUACULTURE LEASE

JOSEPH L. PORADA DBA DOWNEAST ACADIA SEAFARMS

68 Downeast Farm Road, Hancock, ME 04640

PHONE: 207-479-0322

E-MAIL: jporada@downeastacadiaseafarms.com

1) LOCATION OF PROPOSED LEASE

- a) Vicinity Map: Morgan Bay, Surry Attached (A)
- b) Boundary Description: Attached (B)

- 2) **LAND OWNERS:** Attached (C) Names and addresses of all in the vicinity are attached. Access to this site will be from a public landing, Matthew Gerald's Property Town Hill and the property of Susan Straubing and Sandy Bolster whose riparian property is immediately shore side of the proposed site.

3) REASEARCH PROGRAM AND OPERATION

a) The purpose and design of the study

Research and development toward commercial viability of quahog and oyster aquaculture and a standard lease, in conjunction with the Downeast Institute (DEI) and initially with the help of a USDA SBIR Grant. This research has involved several locations, including this proposed site, utilizing various treatments and including obtaining comparative data toward best commercial locations by growth rate and survival. All locations are distinct in substrate makeup and similar in that all support some degree of hard clam population. Morgan Bay was shown to be one the two most appropriate and sustainable location

If we find through this experiment, it is feasible to use only submerged gear, this is the method we shall use. Submerged gear may still be visible during times of low tide

b) The species, amount and proposed source of organisms to be grown

- Quahogs (*Mercenaria mercenaria*), 500+- thousand organisms
- American Oyster (*Crassostrea virginica*) 100 – 500 Thousand
- European Oyster (*Ostrea edulis*) < 10 Thousand

Organisms will be sourced from The Downeast Institute, Jesse Leach dba Bagaduce River Oyster Company and Muscongus Bay Aquaculture.

c) A description of the culture and harvesting techniques to be used

- Stacked growout cages and floating nursery cages will be used for all species. Oysters will be grown in floating cages, ADPI bags and bottom fixed growout cages. Harvesting will be accomplished through hand harvesting and with the use of bullrakes and tongs.
- On average, I and, occasionally, one or two helpers will be at the site less than twice per week, sometimes only two or three times a month. I will be necessary to be on site more during placement of experiments and gathering data, harvest and maintenance after heavy weather.
- The site and gear will be tended by boat and by wading at low tide where possible. The boat will be no more 20' in length and be powered by a 40 horsepower or less outboard motor. The motor will only be running as necessary to move from point to point or will be shut down. No other power equipment will be used.
- Shellfish will be culled, processed and bagged on site and on the shore owned by Susan Straubing and Sandy Bolster. Animals not ready for market will be placed back on site.
- There will be no debris resulting from our activity other than naturally occurring seaweed and algae that will likely become dislodged during our work on the site and shell matter from animals that expire. When cleaning of gear is necessary, all work will be done by hand with brushes and sea water without any cleaning chemicals or agents. Most cleaning will be accomplished by exposure to sun and air. Shell matter will be removed or left to settle into the sub-tidal sediments which will help decrease sediment acidity. Any additional seaweed and algal growth will help absorb carbon from the growing area and help lessen the acidity of local waters while increasing habitat for local floral and faunal inhabitants.
- We will begin this experimental process using small numbers of the treatments as described. As we learn the best approaches and methods we will focus on those and expand the breadth of the experiments as indicated by given results and successes.

d) The expected length of the study is three years.

e) Our research is commercial.

4. Existing uses (Morgan Bay, Surry)

- Limited/occasional hard clam harvesting shoreward of site, recreational and commercial. There is a population of soft shell clams near and along shore with few or none in or near the proposed lease site. One or two other harvesters occasionally use this resource commercially though not in the area of this proposed experimental lease. The site will be below the extreme low tide line and will not effect activities above the extreme low water line.
- Occasional worm harvesting shoreward of the site on the intertidal portion of the cove

- There is no general navigational channel or regular navigation in the area over the proposed site. There is moderate incidental ingress and egress for recreation by pleasure craft, kayak and canoe.
- There are 8 (eight) moorings in the vicinity. One, on a small mushroom anchor, in the site itself has not been used for years and has moved with ice from slightly north of the proposed site. Another, to the SE, is owned by Sandy Bolster whom has given me permission to use his riparian land and has no issue with my proximity to his mooring. Six others have been placed Easterly and Southerly of the proposed site. Mr. Pirozollo, a riparian owner, owns these. The closest of these six mooring is over 500' from the proposed site.
- Sight-seeing and other recreational activities are normal activities on shore.

MARINE PATROL OFFICER COMMENTS

MY CONCERNS

1. AREA IS USED FOR SMALL BOAT REC. ACTIVITY
2. NO PUBLIC RAMP - WHERE WILL YOU ACCESS SITE?
3. WHERE WILL YOU STORE GEAR?

THESE STATEMENTS ARE TRUE TO THE BEST OF MY KNOWLEDGE AND OBSERVATION.

OFFICER HUNT SOWERS SIGNED [Signature] DATE 2-17-09

5. EXCLUSIVE USE

- This project will require exclusive use on 4 acres in the subtidal zone beyond the edge and center of the extreme low tide line in Morgan Bay, Surry. Very small clams and oysters will be planted in a succession of various experiments will need to be protected from siltation, digging and any disturbance of substrate while they grow and reach harvestable size toward the fruition of this research and investment goal.

There is no need to restrict fishing for finfish or any current form of navigation. Any floating gear will be well spaced, configured and marked to allow safe ingress and egress by all normal forms of navigation in Morgan Bay. There is ample area all around the site for all activities. No traditional, recreational or fisheries activities will be unduly or unreasonably interfered with.

6-A DESCRIPTION OF PROPOSED LEASE SITE

A. This site will work for the aquaculture of hard clams as evidenced by the the existing wild population in the area and American and European oyster as evidenced by populations or cultivation existing in other Blue Hill Bay locations, notably Salt Pond in Blue Hill, with similar environmental conditions.

There is some recruitment and survival of hard clams from wild spawning in or in the vicinity the cove. There is much indication of green crab predation and likely mortality due to weather such as freezing in the winter. There is substantial green crab predation and population. Water temperatures rise early and stay warm longer relative to water depth, tidal flow rate and the fact Morgan Bay is oriented opening toward south, optimizing solar warming sunrise through sunset.

Bottom Characteristics: generally a mix of mud and sand

- 1) Mean and extreme low tide water depth is approximately 2' to 3' north to south. Mean high tide depth less than 15 ft.
- 2) Topography: Bottom is flat with slight incline seaward.
- 3) * Plants are virtually or completely non-existent within the proposed site. Small patches of eel grass exist near by to the southeast.
 - * Blood and sand worms common though not in commercially harvestable quantities .
 - * Hard clams are common though not in great abundance apparently largely due to significant green crab predation.
 - * Soft shell clams do exist in the cove outside the proposed site.
 - * Sea stars, hermit crabs, several species of worms and snails, soft shell clams and surf clams are present.
 - * Horseshoe crabs are present.
 - * Mussels are common in patches outside the proposed site.
- 4) Current speed is tidal rise and fall only, North/South
- 5) Shoreline is rocky over clay with some areas of sand gravel and cobble. The upland characteristics include forest and field with homes and camps interspersed.
- 6) There is patchy aquatic vegetation evident in the area outside the proposed site to the south.

B. ENVIRONMENTAL IMPACT

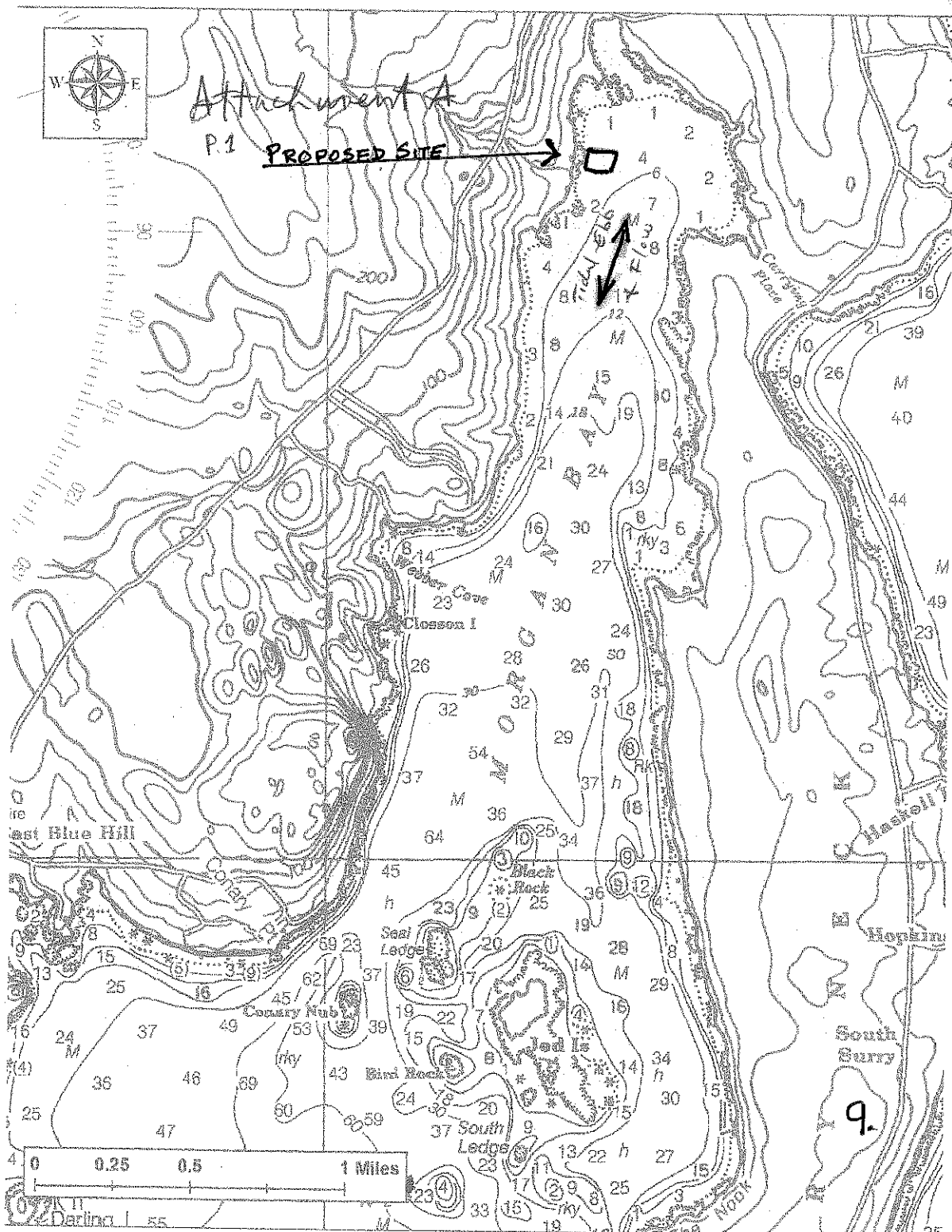
- The husbandry and harvesting techniques used will not impact the physical or ecological environment around the lease site except as follows:
 - 1) Though not high profile as viewed from shore, any required State and USCG marker buoys, as required, will be visible. Lobster buoy size floats will be used as allowed.
 - 2) Any spawning of cultured native clams on the site will result in an increase of recruitment of young clams into the larger part of Morgan Bay, Surry.
 - 3) Any structures will increase habitat for and survival of juvenile fish and other sea life.
 - 4) Oysters are not likely to self seed in the area as has been explored and evidenced in other local oyster farms. There is likely oyster spat in the water during certain times of year resulting from the oyster population in Salt Pond, Blue Hill. There are no known resulting oyster populations in Greater Blue Hill Bay.

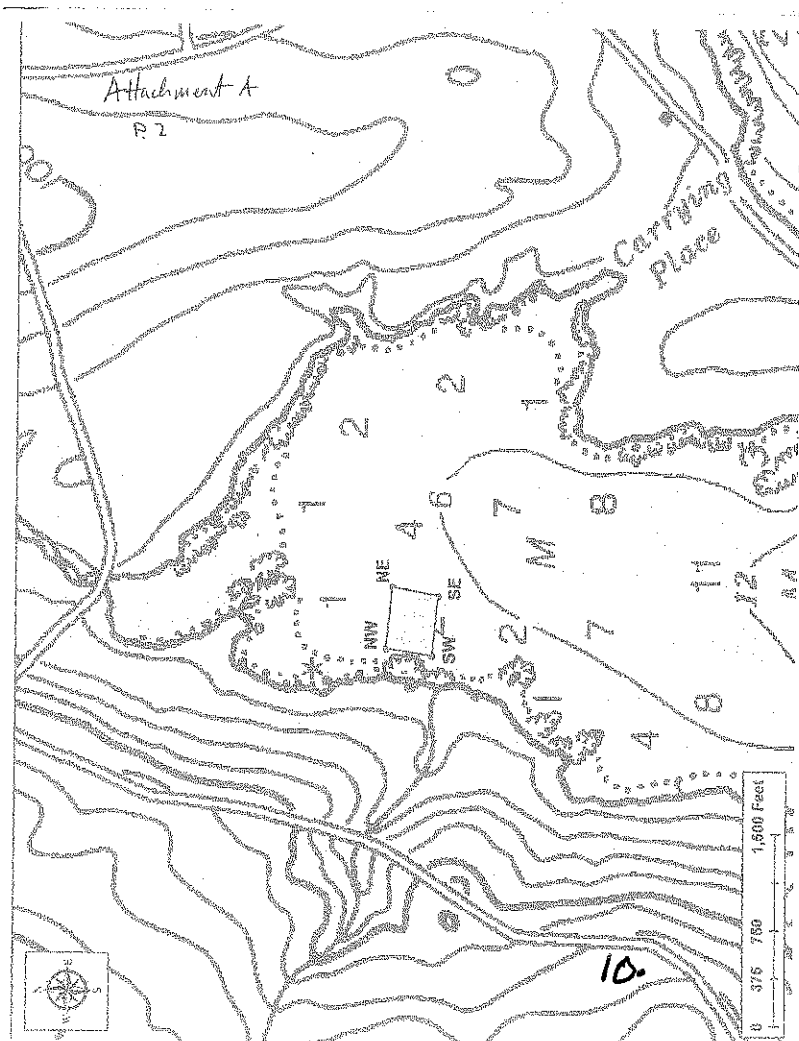
7) STRUCTURES

- Netting, soft bags, extruded plastic bags and clam/oyster submerged and floating cages

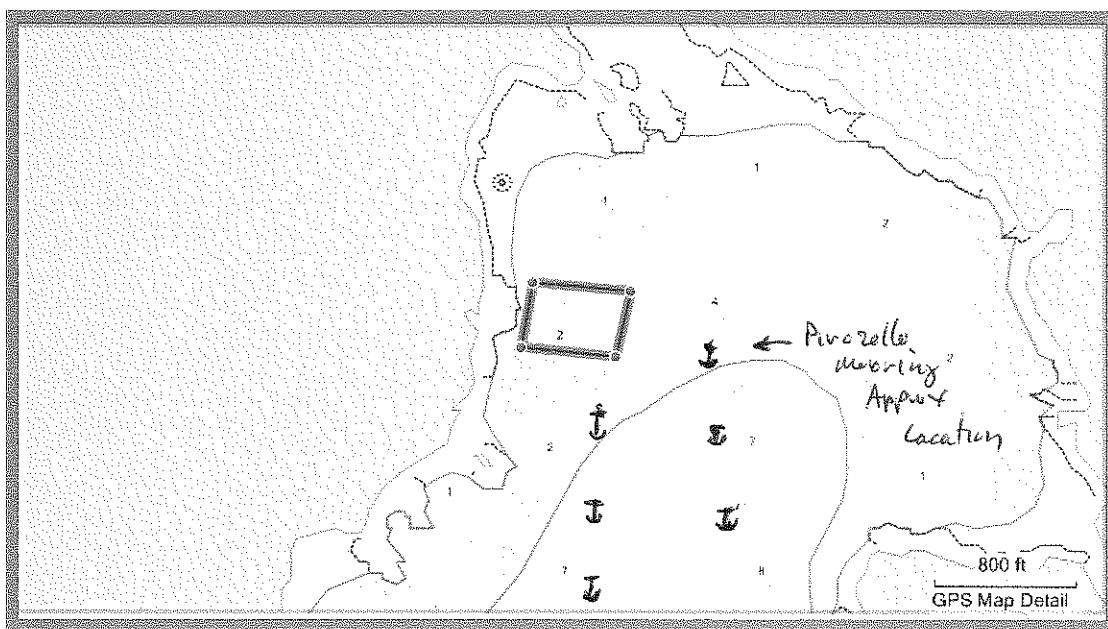
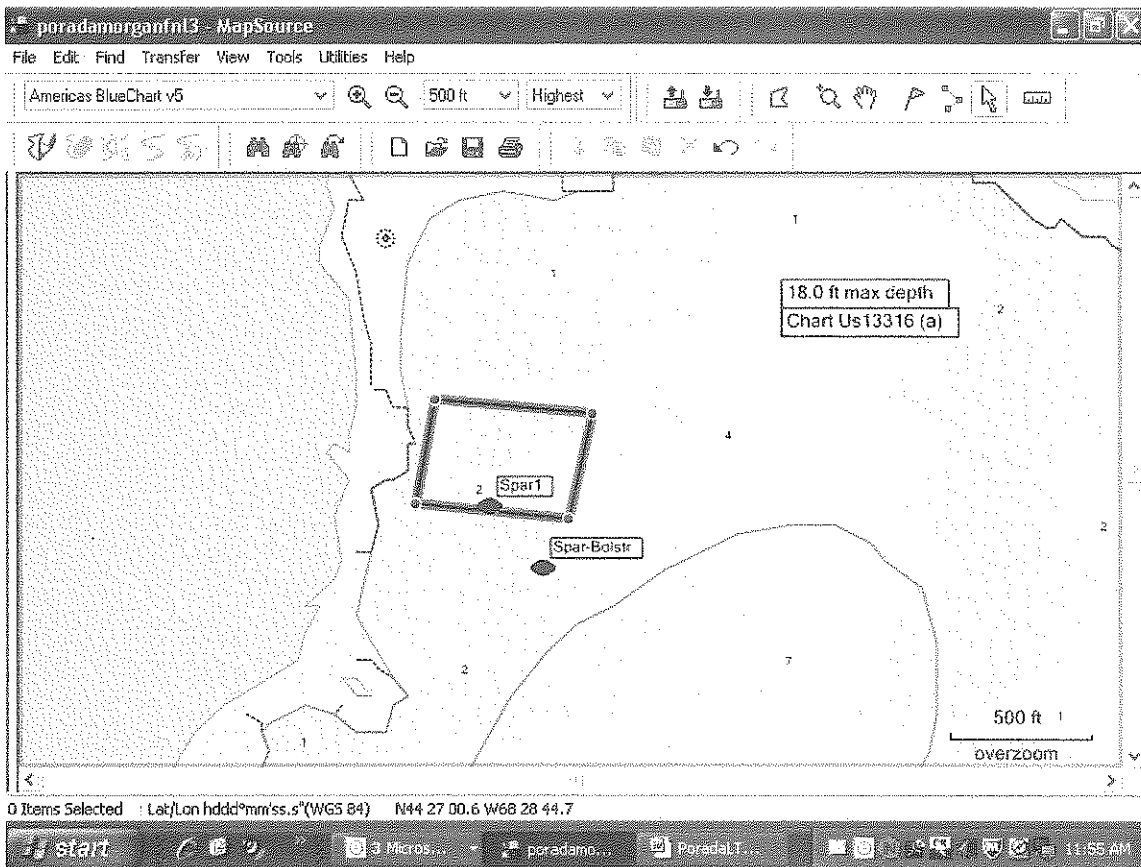
8) DISCHARGE

- None





Attachment B



NW - 44° 26' 58.8" N
 NE - 44° 26' 58.3" N
 SE - 44° 26' 54.7" N
 SW - 44° 26' 55.2" N

68° 28' 59.0" W
 68° 28' 52.4" W
 68° 28' 53.4" W
 68° 28' 59.8" W

then 484 feet at 96° True
 then 374 feet at 191° True
 then 469 feet at 276° True
 then 367 feet at 9° True to NW

4.0 acres

Attachment C (a)

RIPARIAN OWNERS LIST

THIS LIST MUST BE *** CERTIFIED ***

On this list, please show the current owners' names and mailing addresses for all shorefront parcels within 1,000 ft. of the proposed emergency lease site. Ask the Town Clerk to complete the certification form below. If the parcels are within more than one municipality, provide a separate, certified, riparian list for each municipality.

TOWN OF:

<u>MAP #</u>	<u>LOT #</u>	<u>Landowner name(s) and address(es)</u>
17	14	Robin Jones & Margaret Blom PO Box 229 Surry, ME 04684
17	16	James & Ruth Yerkes 636 Morgan Bay Rd Surry, ME 04684
17	17	Dennis & Susan McDonald 595 Morgan Bay Rd, Surry, ME 04684
17	17A	Jack R. Pirozzolo PO Box 40 Lancaster, MA 01523

CERTIFICATION

I, Harcel Winslow, Town Clerk of Surry, certify

that the names and addresses of the property owners listed above are those listed by this municipality and are current as of this date.

SIGNED: Harcel Winslow DATE: 8/15/12 SEAL:

Attachment C (4)

RIPARIAN OWNERS LIST

THIS LIST MUST BE *** CERTIFIED ***

On this list, please show the current owners' names and mailing addresses for all shorefront parcels within 1,000 ft. of the proposed emergency lease site. Ask the Town Clerk to complete the certification form below. If the parcels are within more than one municipality, provide a separate, certified, riparian list for each municipality.

TOWN OF:

MAP #	LOT #	Landowner name(s) and address(es)
17	6	Becker, William M & Ann M. 781 Smitten Farm Lane The Plains, VA 20198
17	8	Marshall Bolster & Susan Straubing 668 Morgan Bay Rd Sunny, ME 04685
17	10	Nicholas & M. Hughes Sichterman PO Box 926, Blue Hill, ME 04614
17	12	Moirn Creaser 662 Morgan Bay Rd Sunny, ME 04684

CERTIFICATION

I, Aparce Winslow Town Clerk of Sunny, certify

that the names and addresses of the property owners listed above are those listed by this municipality and are current as of this date.

SIGNED: Aparce Winslow DATE: 8/15/12 SEAL:

Attachment C (9)

20
25

1000'

1500'

1000'

APR 01 2008

ASSESSORS MAP
TOWN OF SURRY
Moncock County, Maine
SCALE: 1" = 200'

0 100 200 400 600 800 FEET

120

14.

ASSESSORS MAP
TOWN OF SURRY
Monckton County, Maine
SCALE: 1" = 200'

Attachment C (17)



Attachment C (d2)



16

Attachment D

Diantha C. Robinson

Aquaculture Hearings Officer

Maine Dept. of Marine Resources

PO Box 8

West Boothbay Harbor, ME 04575

I, Matthew Gerald, hereby give permission granting Mr. Joseph Porada use of my riparian shore located in the Town of Bar Harbor on the NNW shore of Mount Desert Island for purposes of anchorage and access to his aquaculture sites and/or to harvest shellfish in and around the waters of Blue Hill Bay, Western Bay and Union River Bay including ponds estuaries and coves located there.

Matthew Gerald

Signed




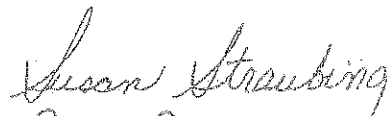
Date

7/22/09

Attachment E

WE GIVE JOE PORADA FULL PERMISSION AND ENCOURAGEMENT
TO USE OUR SHOREFRONT AND TIDAL ZONE EXTENDING FROM IT
FOR HIS QUAHOG AND OYSTER FARMING OPERATION.


MARSHALL BOLSTER

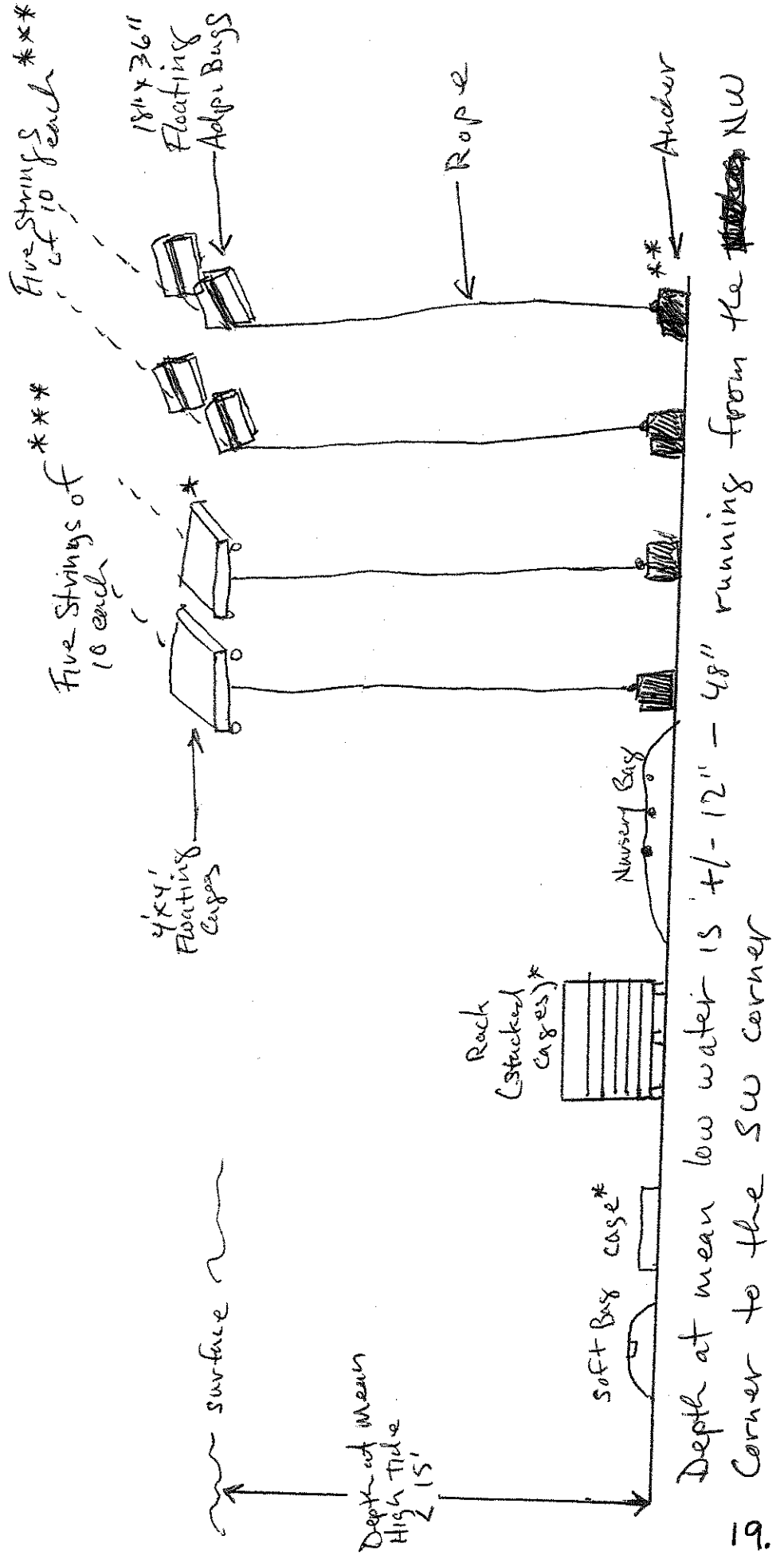

SUSAN STRAUBING

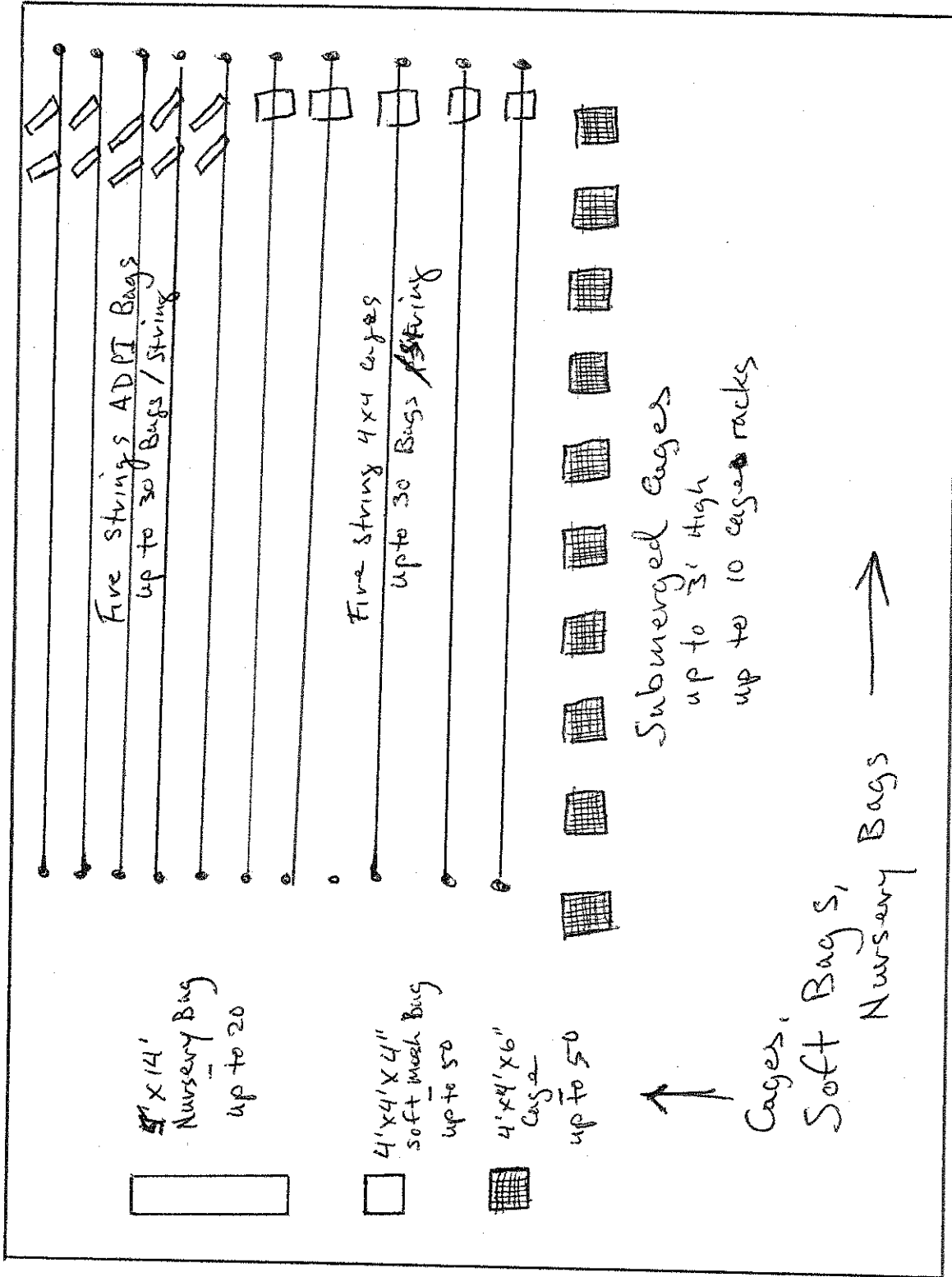
FEB. 19, 2010

SURRY, MAINE

Attachment F: Page 1

- * Cages are constructed of shrimp wire
- ** Strings are anchored at each end, up to ten strings
- *** Over the duration of the lease, we will build to thirty cages and bags per string





Location of specific gear will vary as project develops to best fit the area.

Sichterman
20.

Strawburg/Bolster

Attachment F:
Page 2

Attachment 6



ADPI bags. Extruded plastic. Used on surface
and bottom
18" x 36" x 4"



Soft bag, light netting 48" x 48
Used on bottom"



Nursery bag, light netting and fiberglass
house screen with flotation 5' x 14'
Used on bottom



Cage, shrimp wire with flotation. Used on
surface and bottom. 48" x 48" x 6"



Stacked cages, shrimp wire, stacked
as a rack for oysters and clams.
48" x 48" x 36"
Used on Bottom

Acknowledgement of RuleMarking

According to Department rules, all lease sites are to be marked with a floating device, such as a buoy, which displays the lease identifier assigned by the Department and the words "SEA FARM" in letters of at least 2 inches in height in colors contrasting to the background of the device. The marked floating devices shall be displayed at each corner of the lease area that is occupied or at the outermost corners. If such marking requirements are unnecessary or impractical in your proposed location, provide information as to why that is so and suggest alternate markings.

Escrow Account or Performance Bond and Rental Fee

A. Escrow Account or Performance Bond. Provide documentation confirming that the applicant has read MDMR Aquaculture Regulations 2.40 and that upon issuance of a lease by MDMR the lessee will either open an escrow account or obtain a performance bond, depending on the category of lease as follows:

<u>Lease Category</u>	<u>Amount of Required Escrow or Performance Bond</u>
No structure, no discharge	None
No structure, discharge	\$ 500.00
Structure, no discharge	\$
Total combined area of all structures on lease:	
≤400 square feet	\$1,500.00
>400 square feet	\$5,000.00
Structure, discharge	\$ 25,000.00

This site will be marked in compliance with all DMR and USCG requirements. At least 30 days prior to any scheduled hearing, easily noticeable buoys will be placed at the corners of the proposed site.

I have read and understand MDMR Aquaculture Regulation 2.4 and shall, upon issuance of a lease by MDMR, open an escrow account or obtain a performance bond and pay the required rental fee.

Signed Joseph Porada Printed Joseph Porada Date 6-23-12